

Discovery & New Frontiers Lessons Learned

APL

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The Johns Hopkins University
APPLIED PHYSICS LABORATORY

Discovery New Frontiers Missions at APL

| Project | Principal Investigator | Project Scientist | Science Team Members |
|--------------|------------------------|-------------------|----------------------|
| NEAR | None | Andy Cheng | 20 |
| CONTOUR | Joe Veverka | Joe Veverka | 18 |
| MESSENGER | Sean Solomon | Ralph McNutt | 22 |
| New Horizons | Alan Stern | Hal Weaver | 27 |

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Issues & Lessons - 1

- Compatibility of PI & development team
 - Hands-On PI is valuable
 - Selection of senior team members need to fit style
 - Work through the process of forming, storming, norming and performing quickly!
- Tight coupling of science & engineering
 - Development team is enhanced with in-house science team members

Issues & Lessons - 2

- Buy – Off of requirements
 - Resist requirements creep!
- The Government Program Office – it can help
 - Balancing over-sight and in-sight
 - Provides a source for outside expertise on unique problems
 - Balancing the number and depth of reviews
 - Peer reviews
 - Independent Review Teams (IRT's)
 - Resolve funding issues to support
- Openness is **REQUIRED!**

Issues & Lessons - 3

- Balance process knowledge and engineering team knowledge base
 - Inheritance reviews are important
 - Don't assume!
- Integrate mission operations and I&T teams whenever possible